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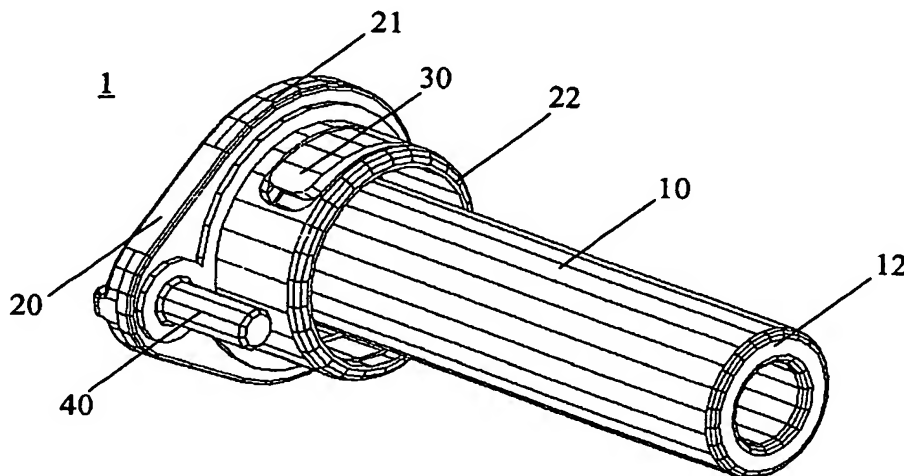
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(54) Title: SELF-LOCKING SHAFT



(57) Abstract: The present invention relates to a self-locking shaft (1), which comprises a shaft portion (10) and a head portion (20) for the mounting of the shaft (1) at a support (50), wherein the head portion (20) comprises resilient clips (30), which latch with the support (50) during a rotational mounting motion of the (1) with respect to the support (50). Further, this invention relates to a support (50) for a self-locking shaft (1) as well as a method for the assembly of a self-locking shaft (1) within a support (50).



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## INTERNATIONAL SEARCH REPORT

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According to International Patent Classification (IPC) or to both national classification and IPC

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Minimum documentation searched (classification system followed by classification symbols)

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X A	FR 2 796 012 A (MEYR) 12 January 2001 (2001-01-12) abstract  page 5, line 13 - page 6, line 36 figures 1-4	1-4, 6, 11  4, 7, 14, 15
X A	WO 94/07040 A (KUEHL HANS) 31 March 1994 (1994-03-31) abstract page 30, line 5 - line 28 page 31, line 25 - page 32, line 19; figures 33, 34, 38, 39	8-10  5, 13-15
X	GB 2 377 376 A (MACKINNON ROBERT KENNETH) 15 January 2003 (2003-01-15) page 6, line 11 - page 7, line 16 figure 4	13-15

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A.	<p>DE 198 48 289 A (YAZAKI CORP)  2 June 1999 (1999-06-02)  abstract  column 3, line 13 - line 34  column 4, line 8 - line 23  figures 2,3</p>	<p>2-4</p>

# INTERNATIONAL SEARCH REPORT

International Application No  
PCT/EP2004/003597

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
FR 2796012	A	12-01-2001	FR 2796012 A1	12-01-2001
WO 9407040	A	31-03-1994	DE 4231313 A1	24-03-1994
			DE 4231320 A1	24-03-1994
			DE 4231339 A1	24-03-1994
			DE 4231360 A1	24-03-1994
			AU 4817793 A	12-04-1994
			BR 9307080 A	29-06-1999
			CN 1090629 A, B	10-08-1994
			WO 9407040 A1	31-03-1994
			EP 0662200 A1	12-07-1995
			ES 2091033 T3	16-10-1996
			JP 2800066 B2	21-09-1998
			JP 8501140 T	06-02-1996
			KR 215538 B1	16-08-1999
			RU 2109995 C1	27-04-1998
			ZA 9306875 A	14-04-1994
GB 2377376	A	15-01-2003	NONE	
DE 19848289	A	02-06-1999	JP 11126649 A	11-05-1999
			DE 19848289 A1	02-06-1999
			US 6293423 B1	25-09-2001